REMARKS

Claims

Claims 1–18 are currently under examination. Claims 19-21 are added by this paper.

Amendments

The claims have been amended according to conventional US practice.

Claim 8, in its amended form, corrects a minor typographical error.

Claim 16 has been amended as per the Examiner's suggestion. Support for the amendment can be found, for example, in section [008] of the published application (i.e., "computer program").

New claim 19 is supported by the disclosure contained in, for example, section [0011] of the published application.

It is respectfully submitted that the claim amendments do not raise new matter. Entry thereof is respectfully requested.

The amendments render the § 101 and 112 rejections moot.

Rejection under §103(a)

Claims 1–13 and 16-18 are rejected under §103(a) as allegedly unpatentable over Delegacz (*Image display and Visualization*, 2000) in view of Cheng-Sheng (*Proc. of Real-Time and Media Systems*, 1998). Moreover, claims 14 and 15 are rejected under the same section as allegedly rendered obvious by a combination of the aforementioned Delegacz and Cheng-Sheng references further in view of Engel (*Proceedings Visualization*, 2000). These rejections are respectfully traversed.

Delegacz describes creation of a 3D visualization system to aid physicians in observing abnormalities of the human lung. The reference only teaches or suggests a method for 3D-visualisation of a lung using 2D-lung slices by CT. See, the entire ABSTRACT section. These lung slices run through a segmentation procedure for better visualization of the lung tissue. The segmented lung slices are used as input for the 3-D-visualisation (see, chapter 4: "Segmentation" and the disclosure in Figures 1-3a). The visualization system presents the user a slice sequence view (see, Figure 4), a view of the lung as a 3D-object by volume rendering (see, Figures 5 and 6) and sliding thin slabs of the 3D-projection (Figures 7 and 8). Further the 3D-visualisation system allows a general look of the lung object by surface rendering or surface and volume rendering (Figures 9 and 10). To render surface and volume data, Delegacz uses an known algorithm called "shear-warp." See, page 402, last paragraph of the article.

Such a combination of surface and volume data is not the claimed 2D projection of a 3D object. Also Delecagz does not show the claimed 2D having sub-areas with access to a 3D database. This aspect is conceded in the paragraph bridging pages 6 and 7 of the Office Action, wherein the Examiner states that "Delegacz fails to specifically teach the detailed image is shown on the screen within the subregion." The Office Action then proceeds to contend that the missing claim element is taught by Cheng-Seng et al. Applicants respectfully disagree.

Cheng-Seng describes a simulated surgery of a 3D-image to allow a better view on the resulting image after the cutting operation. See, chapter 2.3 the simulated surgery and the Figure before the "Conclusion" Section of Cheng-Seng et al. It is therein described that the technique involves using a mouse to create several control points on the image and the polygon enclosed by these points is the section that simulates the surgery. Secondly, users must specify the depth to be cut. With this depth, the cut volume will be specified, and all the data in this volume must be removed. But this detail image does not have different information content than the 3D-object. In Cheng-Seng the picture of the 3D-object and the sub-area are based upon the same 3-D-volume data base. Cheng-Seng does not involve the handling of any 2-D-images. Thus, a combination of the above-cited reference would, at most, teach or suggest a method, wherein the sub-area of an image shows an image of the same data quality.

In other words, the references at their broadest interpretation teach a 2D-slice image containing a sub-area with another 2-D-slice image or a 3D-image containing a sub-area with an other 3D-image, each of which comprise the same database. Additionally, since Cheng-Seng is directed to accelerated volume rendering of 3D-images, the reference is absolutely silent with regard to a projection data which represents a two-dimensional projection, as recited in Applicants' claim 1. Insofar as neither Delegacz nor Cheng-Seng show the claimed projection or provides any hint or suggestion about this feature, a combination of the cited references fail to *prima facie* render obvious the claims of the instant application. Thus a 2D-image containing a sub area with 3-D-data images is not shown by a combination of the cited references.

Therefore, it is respectfully submitted that the instantly claimed subject matter is fully inventive over the cited references and that the Office Action has failed to meet the basic criteria for *prima facie* case of obviousness. As such, all the rejections under 35 U.S.C. §103(a) must be withdrawn.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response to Deposit Account No. 13-3402.

Respectfully submitted,

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